

Synopsis of Recommendations by Powder Point Bridge Committee

Below is a pro and con evaluation matrix for the various alternatives that the committee considered. These recommendations have been extracted from the March 2, 1986 minutes.

Alternative A - Restoration using treated southern pine to reproduce original construction by replacing defective members.

<u>PRO</u>	<u>CON</u>
1. Low initial cost	1. Load limited (4 tons)
2. Simplicity of construction	2. Fire hazard
3. Meets desire for a wooden bridge	3. High residual maintenance cost
	4. Potential closing for maintenance

Alternative B - Reconstruction improving and upgrading original configuration using treated southern pine.

<u>PRO</u>	<u>CON</u>
1. Load limit improved (6 tons)	1. High maintenance cost
2. Improved safety for vehicles and pedestrians	2. Fire hazard
3. Simplicity of construction	3. Potential closing for maintenance
4. Improved drainage	
5. Meets desire for a wooden bridge	

Alternative B' - Replacement using treated southern pine.

<u>PRO</u>	<u>CON</u>
1. Load limit improved (6 tons)	1. High residual maintenance cost
2. Improved safety for vehicles and pedestrians	2. Potential closing for maintenance
3. Simplicity of construction	3. Fire hazard
4. Improved drainage	4. High initial cost
5. Meets desire for a wooden bridge	

Alternative C - Replacement using tropical hardwoods.

<u>PRO</u>	<u>CON</u>
1. Load limit improved (15 ton)	1. High initial cost
2. Very low maintenance cost	2. Single source construction material
3. Improved safety for vehicles and pedestrians	3. Wood construction; however, not the original material
4. Fire resistant construction	
5. Simplicity of construction	

Alternative D and Alternative E - Replacement with concrete deck beams and concrete piles. The same evaluation applies to each alternative.

<u>PRO</u>	<u>CON</u>
1. Load limit improved (15 ton)	1. High initial cost
2. Low maintenance cost	2. Complex construction
3. Improved safety for vehicles and pedestrians	3. Public resistance to a highway bridge
4. Fire resistant construction	

Below is a table showing the cost comparison of the various alternatives prepared by Universal Engineering, the design engineering firm hired by the town. Note that the breakdown for alternative B' is not included, as it was not included in the preliminary draft report from Universal.

TABLE 8.2
COMPARISON OF ALTERNATES

Design Alternative	A	B	C	D	E
Bridge length (feet)	2200	2200	2200	2200	2200
Bridge width	24'±	27'-6"	24'-0"	30'-6"	30'-6"
Bridge depth (inches)	17-1/4	18-3/4	17-3/4	28	31
Vertical clearance (feet)	5.4	9.4	9.4	9.4	9.4
Rating (tons)	4.6	6.0	15	15	15
Speed limit (MPH)	10	10	15	15	15
Life expectancy (years)	25	25	50	50	50
Estimated construction cost (\$ million)	\$1.5	\$2.3	\$2.9	\$4.2	\$4.4
48-yr. life-cycle costs (\$ million @ 1986 prices)	\$8.0	\$6.8	0	\$0.6	\$0.6
Total 48-yr. costs (\$ million @ 1986 prices)	\$9.5	\$9.1	\$2.9	\$4.8	\$5.0
Annual cost of borrowing at 6%, 20 yrs. (\$ thousand)	\$240	\$256	\$157.5	\$222.5	\$232.5

The Bridge Committee unanimously recommended alternative C to the Finance Committee. The Finance Committee accepted this recommendation on a 6 - 3 vote.